

# NVRmini

Simply Plug and Play




The Intelligent Surveillance Solution

# Agenda

- Outstanding Features
- Features
- Supported Brands
- Structure Comparison / Live View Performance
- Spec Comparison
- Product Positioning
- Application
- Appendix:
  - Specifications
  - Functionality Comparison
  - Remote PC Minimum Requirement
  - RAID Comparison

# Outstanding Features

-  **Linux** embedded – free from PC crash and virus attack
-  **Server-Client** architecture
-  **Easy Installation**
-  **Web-based** network appliance architecture, remote live viewing
-  Supported by **NUUO CMS**

# Outstanding Features

-  Support **Point of Sales (POS)**
-  Open platform for **14 brands** IP camera
-  Support **8 mega-pixel / H.264** camera
-  **Intelligent Search** for 5 events
-  Support **RAID** 0,1,5,5+spare,10

# Features

- Recording without PC turning on
- Up to 2/4 SATA 3G/s drives
- Support D1, real-time recording
- Manage 4/8/16 IP Cameras
- Real-Time A/V viewer
- I/O device integration
- Online GUI recording schedule
- Remote client application program – connect unlimited NAS servers

# Supported Brands

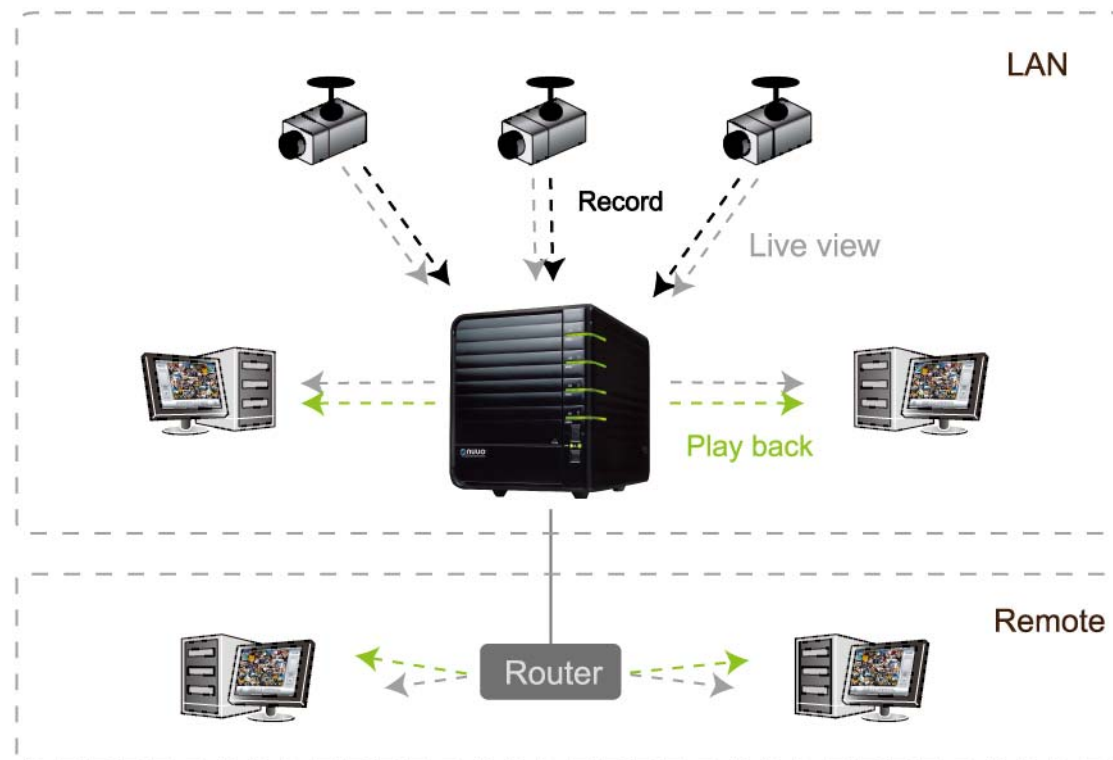
- ACTi, Arecont, Axis, Cisco, D-Link, IQinVision, Levelone, Linksys, Lumenera, Mobotix, Panasonic, Sony, Vivotek, Zavio



# Structure Comparison

- **NUUO NAS NVRmini Standalone:**  
**Server-Client Architecture**

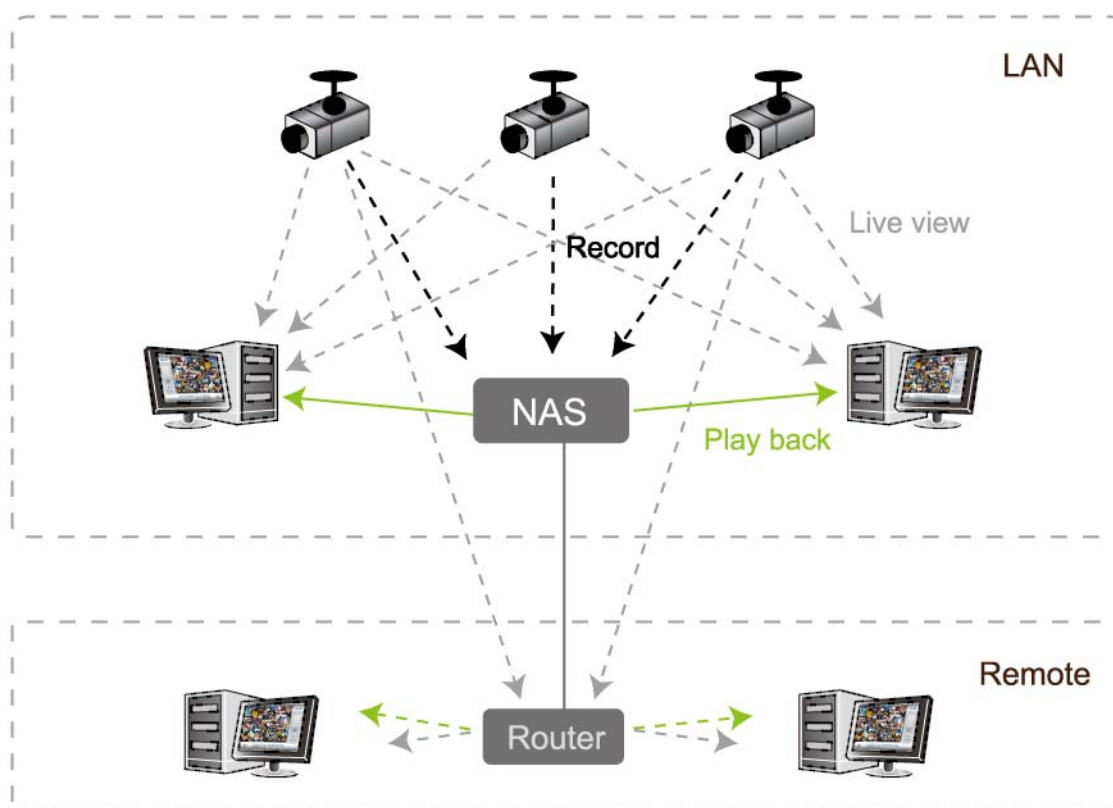
NAS directly connects to cameras. Users access NAS to receive the live streams.



# Structure Comparison

- **Koukaam IPCorder and QNAP VS series:**

Cameras provide the live video streams to users directly, not through the NAS.

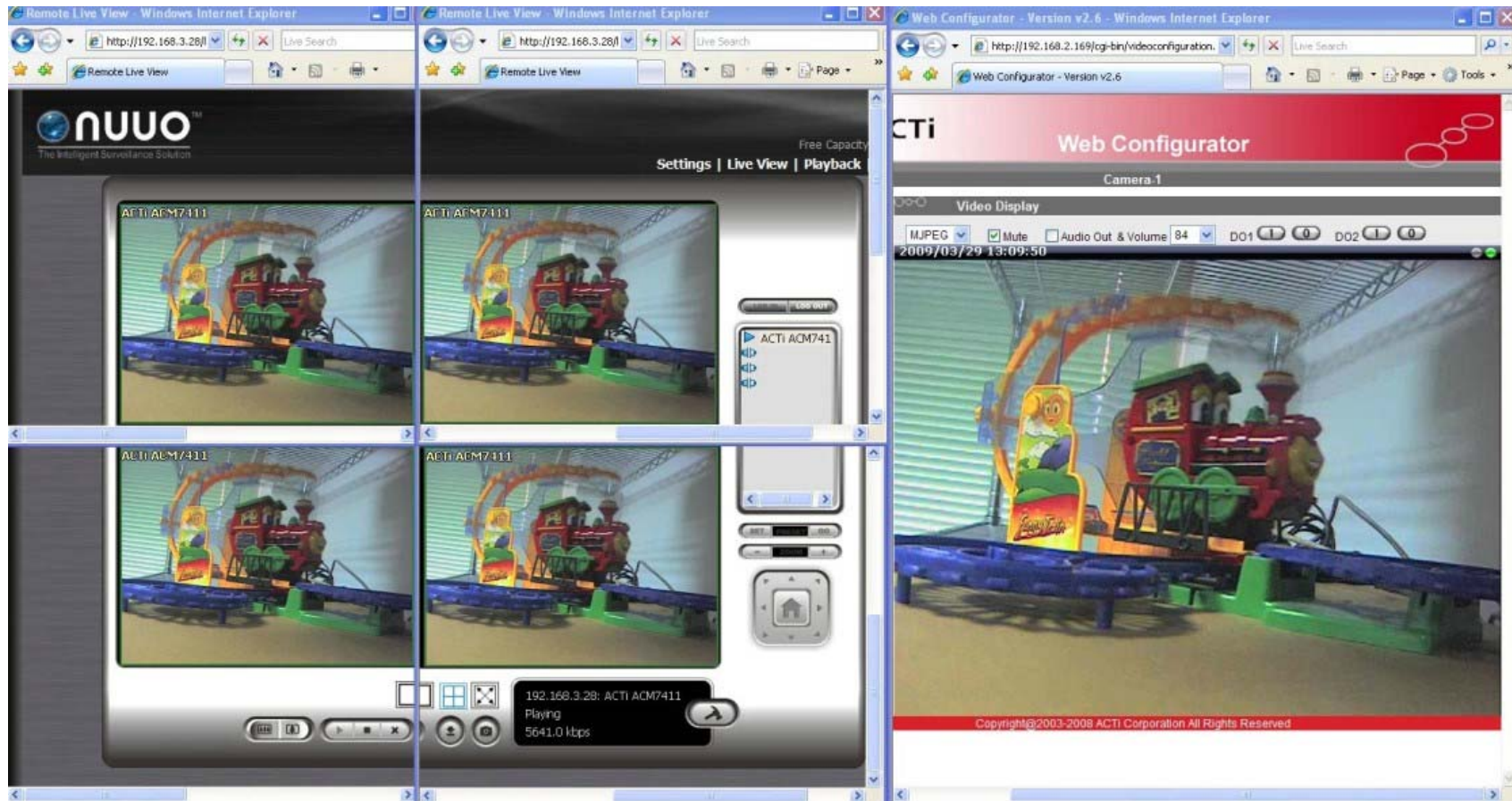




# Structure Comparison

item	brand	NUUO	Other brands
Recording frame rate and live view frame rate		★ Stable with high recording quality	Unstable with lower recording quality (Easily loss frame)
The number of ports need to be set in router (for remote side)		★ 3 ports for NAS, live view and playback	The more cameras, the more ports should be set up. (Need to open 2 ports (A/V) in router for each camera)

# Live View Performance



NUUO: Smooth performance with good quality

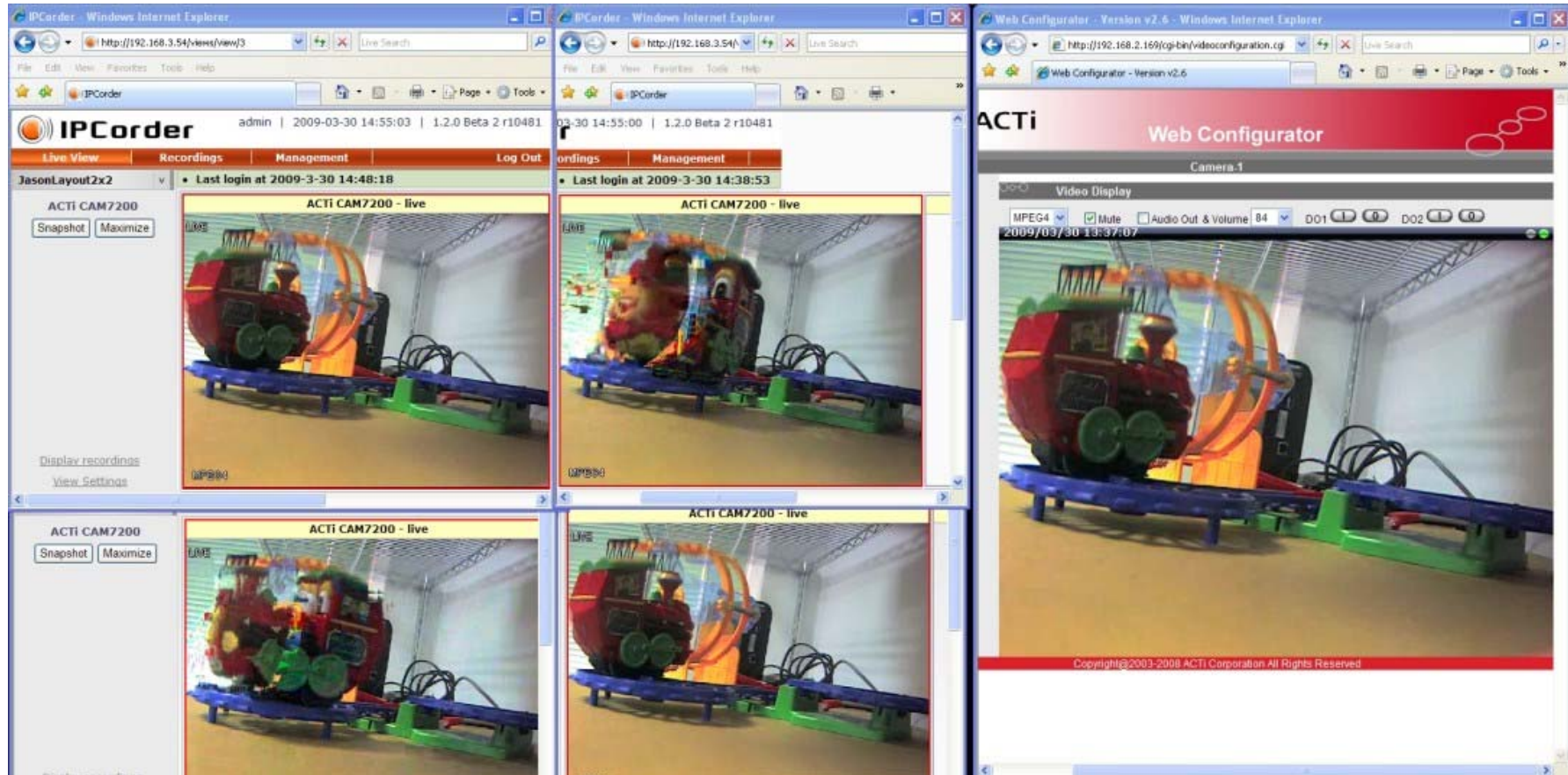
# Live View Performance



QNAP: Frame flip and drop with a little corruption



# Live View Performance

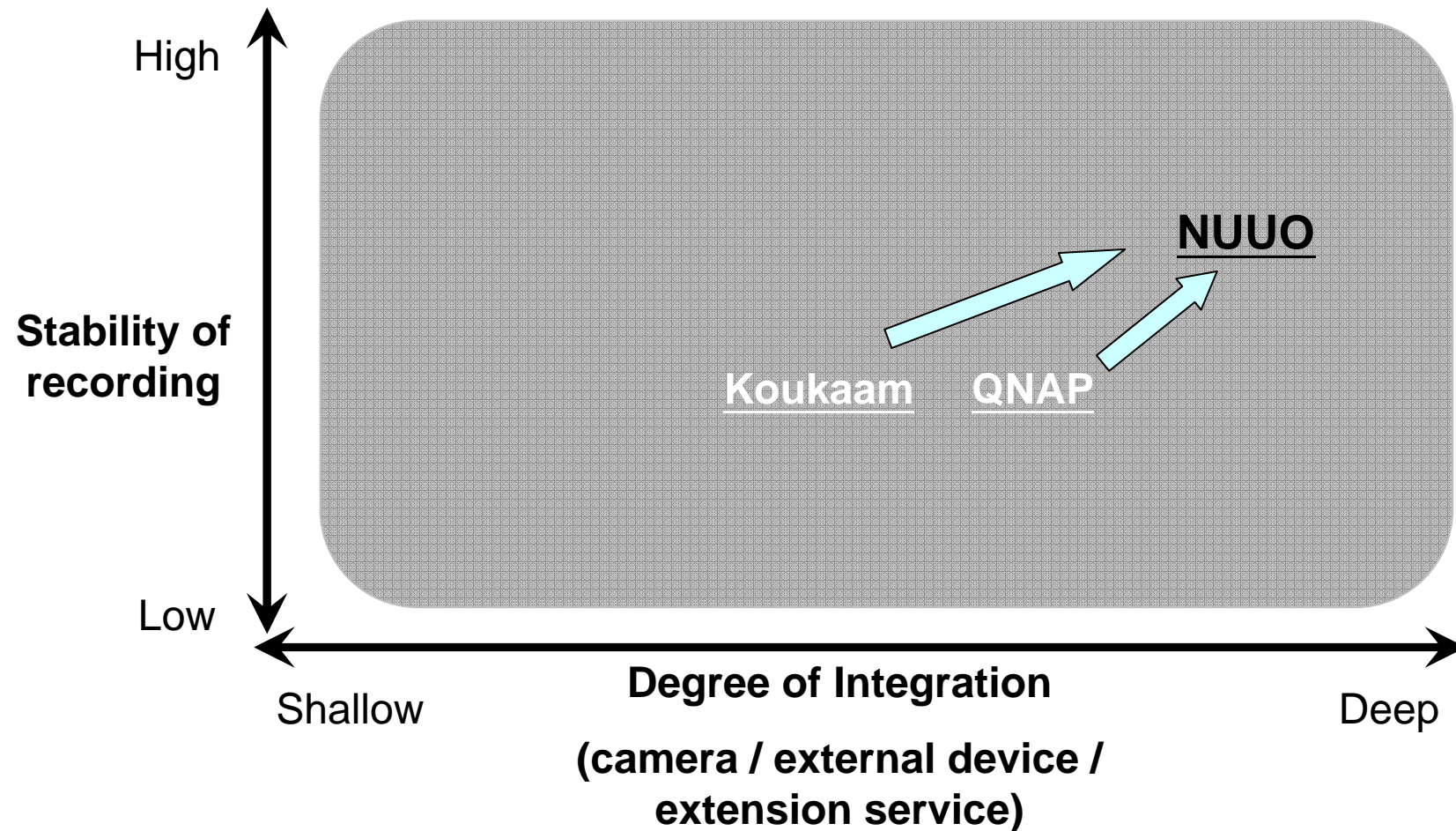


Koukaam: Frame flip and drop with a little corruption

# Spec Comparison

	<b>NUUO</b>	<b>QNAP</b>	<b>Koukaam</b>
<b>Number of Brands Support</b>	14	<b>22</b> Total number of cameras is less than NUUO	8
<b>Compression Format</b>	<b>H.264, MPEG4, M-JPEG, MxPEG</b> MxPEG is for Mobotix	H.264, MPEG4, M-JPEG	H.264, MPEG4, M-JPEG
<b>Intelligent Search</b>	General motion, Foreign object, Missing Object, Lose focus, Camera Occlusion	None	None
<b>CMS</b>	<b>Support</b>	Software supports liveview up to 120 ch	None
<b>POS</b>	<b>Yes</b>	No	No
<b>GUI - Schedule</b>	<b>Yes</b>	No	No

# Product Positioning



# Application

- **What we provide?**

Stable recording with good quality, videos playback and events intelligent search via Internet anytime and anywhere

- **Where to apply?**

Home, retail, banking (ATM), branch, warehouse, parking lot, library, school, pre-sold house (building), villa, gas station, VRS, transportation, etc.

- **What customers benefit?**

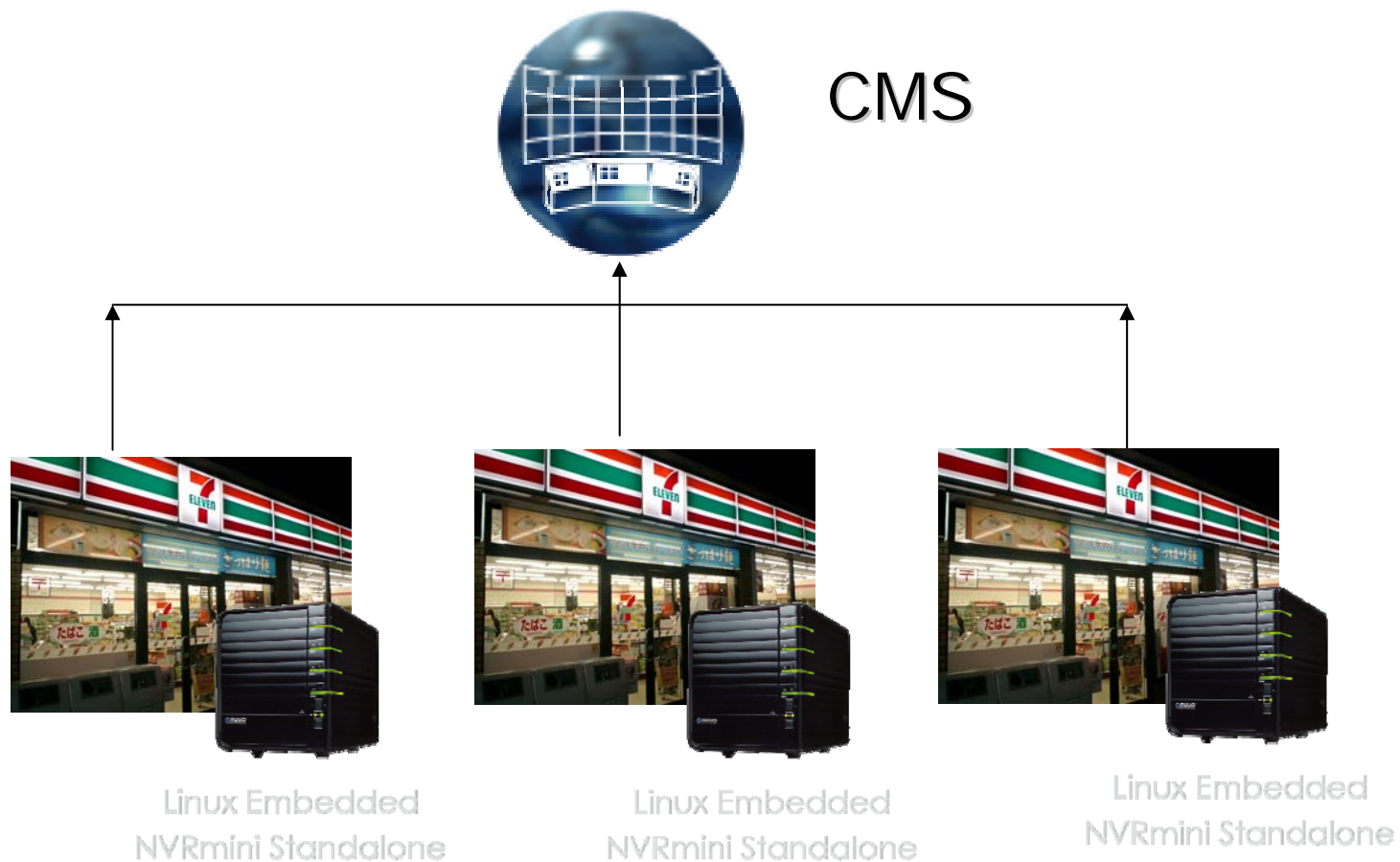
Security, safety, theft prevention, user-friendly interface, fast and easy event searching, remote recording, etc.

# Application

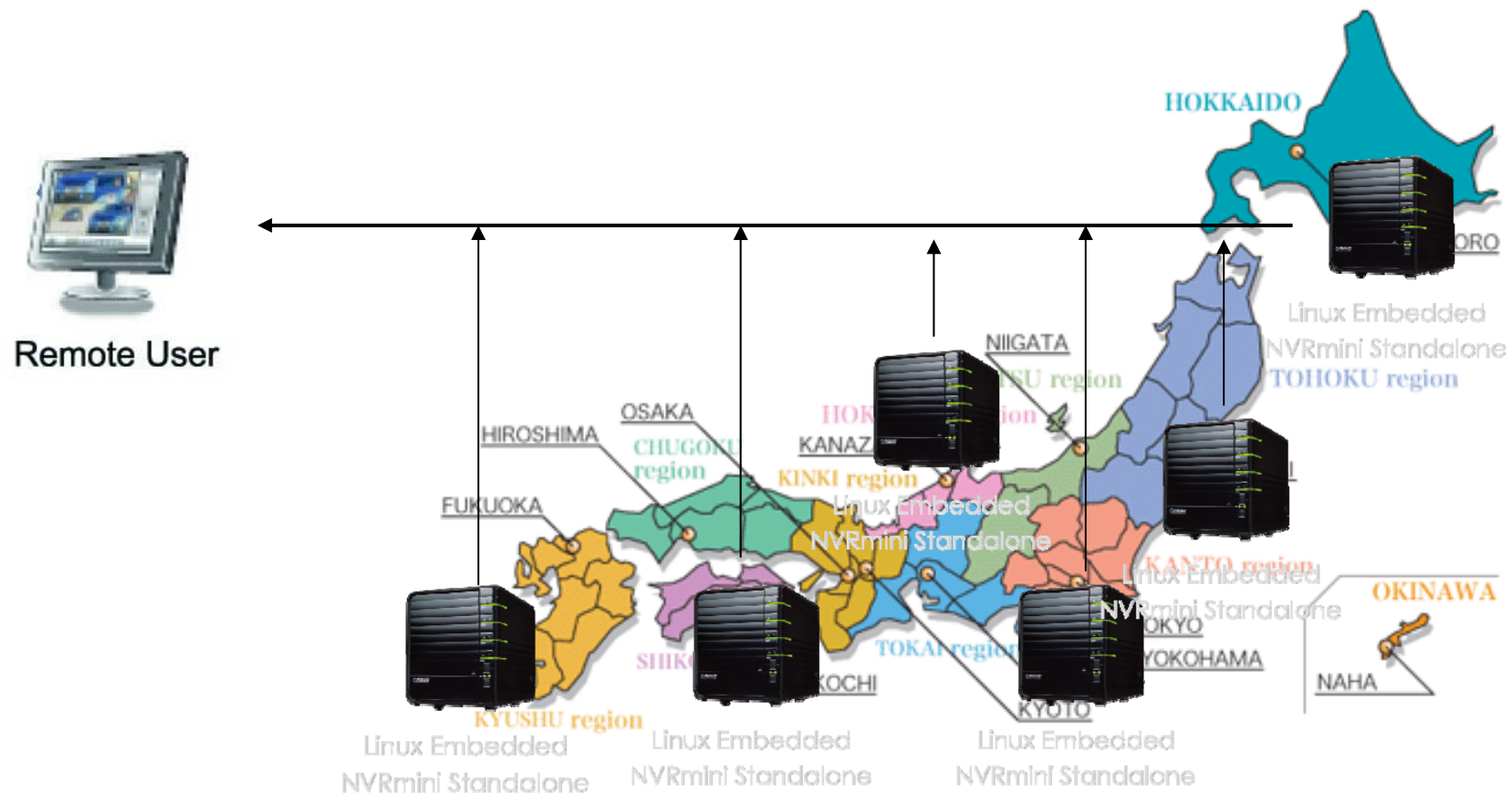
- Retail
- Logistics center
- Banking
- VRS



# Application: Retail

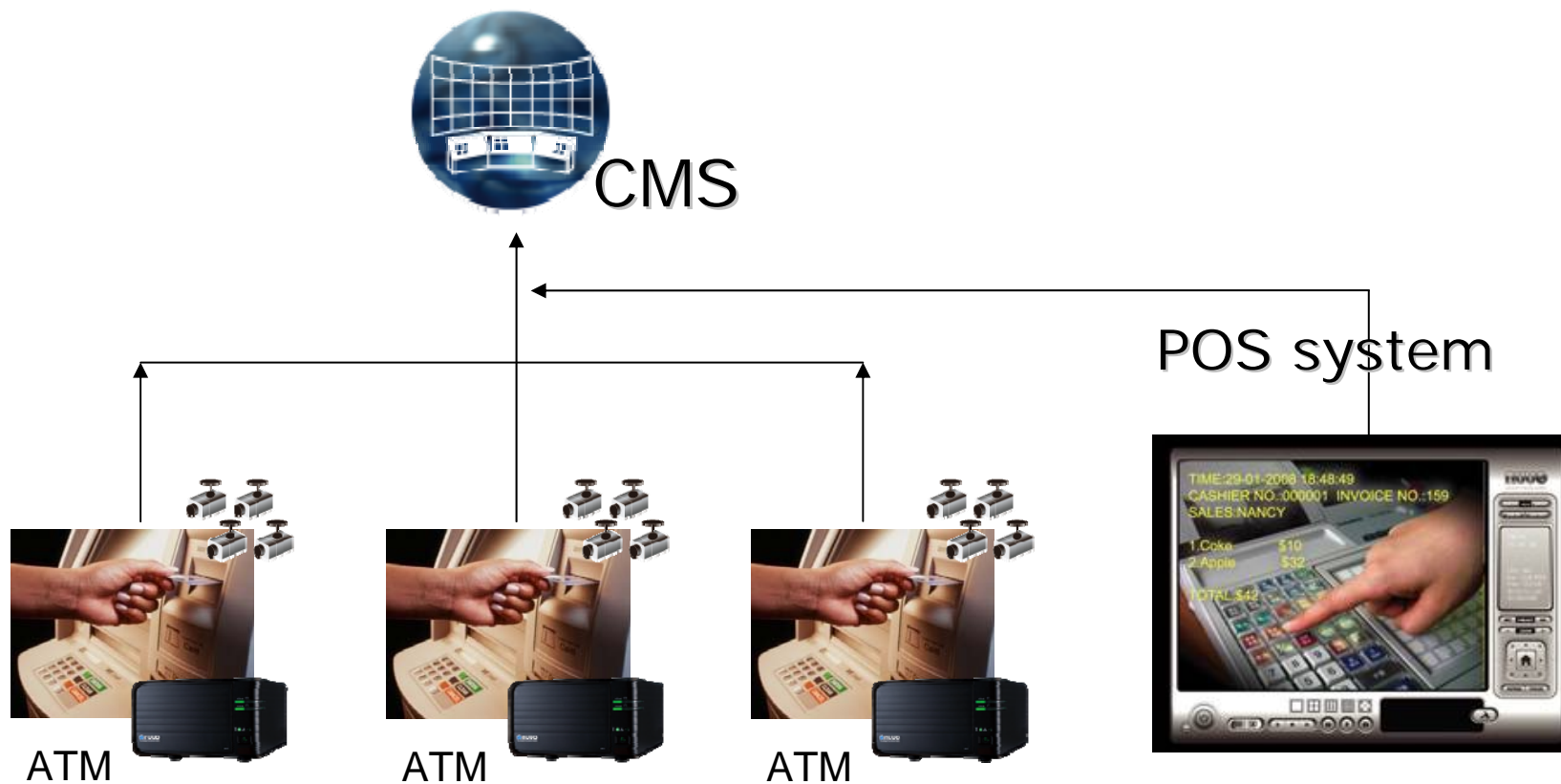


# Application: Logistics center



# Application: Banking

- ATM



# Application: VRS



**Control center**



Linux Embedded  
NVRmini Standalone



**Security Guard**



# Appendix

- Specifications
- Functionality Comparison
- Remote PC Requirement
- RAID Comparison

# Appendix: Specifications

NVRmini Specifications			
Model	NV-2040	NV-4080	NV-4160
Recording Cameras	1 ~ 4	1 ~ 8	1 ~ 16
Number of Drives	2xSATA II	4xSATA II	4xSATA II
RAID Level	RAID 0,1	RAID 0,1,5,5+spare,10	RAID 0,1,5,5+spare,10
I/O Interface	1xUSB 2.0	2xUSB 2.0	2xUSB 2.0
LAN Transmission Speed	10/100/1000 Mbps (RJ45)	10/100/1000 Mbps (RJ45)	10/100/1000 Mbps (RJ45)
Power Supply	100-240V	100-230V	100-230V
Power Consumption	41W	61W	61W
Dimension	92.0 x 145.2 x 213.2 mm	188.2 x 152.5 x 227.6 mm	188.2 x 152.5 x 227.6 mm
Weight	1.0 kg (2.2lbs) without drives	2.5 kg (5.5lbs) without drives	2.5 kg (5.5lbs) without drives
Temperature	Operating: 5°C to 35°C		
Humidity	Operating: 10%-85%		

# Appendix: Specifications

Recording			
Model	NV-2040	NV-4080	NV-4160
Recording Performance	D1, 30fps 1280x1024 (1.2M), 12fps(M-JPEG)	D1, 30fps 1280x1024 (1.2M), 12fps(M-JPEG)	Total bitrate: 22Mbps
Recording Resolution	Up to 8 megapixel		
Recording Type	Continuous record, Record by schedule, Manual record, Event trigger record, Digital input trigger record		
Auto Recycling Recording	Auto recycling when storage disk is 2% remained.		
Audio & Video Recording	Audio & video recording in synchronization.		
Playback			
Smart Search	General motion, Missing object, Foreign object, Lose focus, Camera occlusion		
Playback Control	Playback, Fast forward/backward, ...		
Channel	4 ch	8 ch	4 ch

# Appendix: Functionality Comparison

	QNAP VioStor-101	QNAP VioStor-201	NV-2040	NV-4080
Bay	1xSATA	2xSATA	2xSATA	4xSATA
Support Brands	<b>P:</b> Axis, ACTi, Arecont, Canon VB-series, EDIMAX, ELMO, EtroVision, IQeye, iPUX, Mobotix, Panasonic BB, BL and i-pro series, Sony, Sanyo VCC-series, TOA, Toshiba, TRENDnet, Y-CAM <b>V:</b> Axis, ACTi, Arecont, Cisco, D-link, EDIMAX, ELMO(1), EtroVision, GANZ, IQeye, iPUX, LevelOne, Linksys, Mobotix, Toshiba, TRENDnet, Vivotek, Y-CAM		ACTi, Arecont, AXIS, Cisco, D-link, IQinVision, Levelone, Linksys, Lumenera, Mobotix, Panasonic, Sony, Vivotek, Zavio	ACTi, Arecont, AXIS, Cisco, D-link, IQinVision, Levelone, Linksys, Lumenera, Mobotix, Panasonic, Sony, Vivotek, Zavio
Channels	1-4	1-8	1-4	1-8
Record Rate	VGA, 10fps CIF, 30fps	VGA, 10fps CIF, 30fps	D1, 30fps 1280x1024 (1.2M), 12fps	D1, 30fps 1280x1024 (1.2M), 12fps
Compression Format	H.264, MJPEG, JPEG4	H.264, MJPEG, JPEG4	H.264, MJPEG, JPEG4	H.264, MJPEG, JPEG4
Playback	4ch playback	4ch playback	4ch playback	8ch playback
Record Search/Smart Search	None	None	General Motion, Foreign Object, Missing Object, Lose Focus, Camera Occlusion	
RAID	None	0,1	0,1	0,1,5,5+spare,10
Recording on MPEG4	4ch	8ch	4ch	8ch
CIF	Real time for 18.8 days	Real time for 19 days	Real time for 37.6 days	Real time for 37.6 days
D1	Only 10fps for 51.7 days	Only 10fps for 51.7 days	Real time for 16.1 days	Real time for 16.1 days



# Appendix: Functionality Comparison

	QNAP VioStor-2012	QNAP VioStor-5020	NV-4160
Bay	2xSATA	5xSATA	4xSATA
Support Brands	Axis, ACTi, Arecont, Canon VB-series, Cisco, D-Link, EDIMAX, ELMO, EtroVision, GANZ, iPUX, IQeye, LevelOne, Mobotix, Panasonic BB, BL and i-pro series, Sanyo, Sony, TOA, Toshiba, TRENDnet, Vivotek, Y-CAM		ACTi, Arecont, AXIS, Cisco, D-link, IQinVision, Levelone, Linksys, Lumenera, Mobotix, Panasonic, Sony, Vivotek, Zavio
Channels	1-12	1-20	1-16
Record Rate	D1, 30fps	D1, 30fps	Total bitrate: 22Mbps
Compression Format	H.264, MJPEG, JPEG4	H.264, MJPEG, JPEG4	H.264, MJPEG, JPEG4
Playback	4ch playback	4ch playback	4ch playback
Record Search/Smart Search	None	None	General Motion, Foreign Object, Missing Object, Lose Focus, Camera Occlusion
RAID	0,1,5,5+spare,6,6+spare,JBOD	0,1,5,5+spare,6,6+spare,JBOD	0,1,5,5+spare,10

# Appendix: Functionality Comparison

KOUKAAM			
	IPCorder KNR-100	NV-2040	NV-4080
Bay	1xSATA	2xSATA	4xSATA
Support Brands	Axis, ACTi, D-Link, IQeye, Panasonic, Sony, Vivotek, Y-Cam	ACTi, Arecont, AXIS, Cisco, D-link, IQinVision, Levelone, Linksys, Lumenera, Mobotix, Panasonic, Sony, Vivotek, Zavio	ACTi, Arecont, AXIS, Cisco, D-link, IQinVision, Levelone, Linksys, Lumenera, Mobotix, Panasonic, Sony, Vivotek, Zavio
Channels	1-8	1-4	1-8
Record Rate	D1, 30fps 1280x1024(1.2M), 12fps	D1, 30fps 1280x1024 (1.2M), 12fps	D1, 30fps 1280x1024 (1.2M), 12fps
Compression Format	H.264, MJPEG, MPEG4	H.264, MJPEG, JPEG4	H.264, MJPEG, JPEG4
Playback	1ch playback only	4ch playback	8ch playback
Record Search/Smart Search	None	General Motion, Foreign Object, Missing Object, Lose Focus, Camera Occlusion	
RAID	None	0,1	0,1,5,5+spare,10

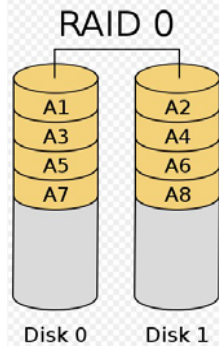
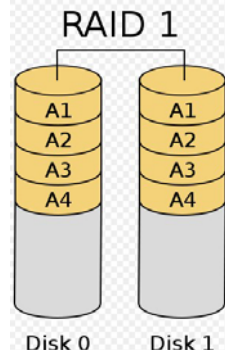
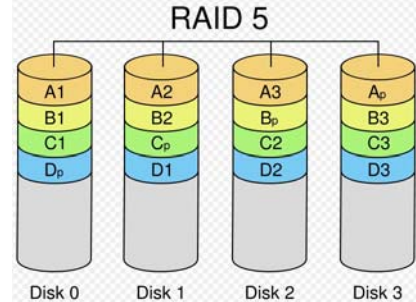
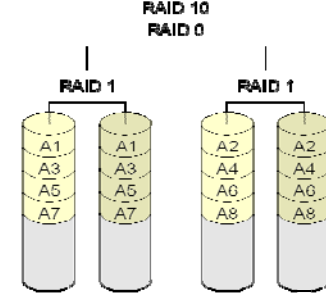
# Appendix: Functionality Comparison

<div> <div>KOUKAAM</div> <div>IPCoder KNR-410</div> <div>NV-4160</div> </div>		
Bay	4xSATA	4xSATA
Support Brands	Axis, ACTi, D-Link, IQeye, Panasonic, Sony, Vivotek, Y-Cam	ACTi, Arecont, AXIS, Cisco, D-link, IQinVision, Levelone, Linksys, Lumenera, Mobotix, Panasonic, Sony, Vivotek, Zavio
Channels	1-24	1-16
Record Rate		Total bitrate: 22Mbps
Compression Format	H.264, MJPEG, MPEG4	H.264, MJPEG, JPEG4
Playback	1ch playback only	4ch playback
Record Search/Smart Search	None	General Motion, Foreign Object, Missing Object, Lose Focus, Camera Occlusion
RAID	0,1,4,5,6,10	0,1,5,5+spare,10

# Appendix: Remote PC Requirement

Remote PC Minimum Requirements			
Model	NV-2040	NV-4080	NV-4160
OS Supported	Windows 2000/ XP/ 2003/ Vista		
CPU	Pentium 4 – 2.4 GHz	Pentium 4 – 2.8 GHz	Pentium 4 – 2.8 GHz
RAM	512 MB		
User Interface	<ol style="list-style-type: none"><li>1. HTTP Web browser - Internet Explorer 6 or later</li><li>2. NUUO Client Application Program</li></ol>		

# Appendix: RAID Comparison

	RAID 0	RAID 1	RAID 5	RAID 10
	 <p>RAID 0</p> <p>Disk 0    Disk 1</p>	 <p>RAID 1</p> <p>Disk 0    Disk 1</p>	 <p>RAID 5</p> <p>Disk 0    Disk 1    Disk 2    Disk 3</p>	 <p>RAID 10 RAID 0</p>
Min # of disks	2	2	3	4
Function	Striped set without parity	Mirrored set without parity	Striped set with distributed parity	Mirrored sets in a striped set
Speed	****	***	***	***
Cost	*	***	**	****
Fault tolerance	None	****	***	****
Storage efficiency	N	N/2	(N-1)/N	N/2
Advantage	Fast and efficient storage	One disk is broken, able to find the same data in another disk	One disk is broken, able to find the same data from the parity in other disks	One disk is broken, able to find the same data in other disks; Faster
Disadvantage	One disk is broken, all data lose	Inefficient storage	Disk failure has a medium impact on throughput	At least 4 disks; inefficient storage